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ABSTRACT

This document presents the National Bureau of Standards safety requirements for home playground equipment intended for use by children 2 through 10 years old. The requirements are concerned with the design and performance of the units and their components, the structural integrity of the units and their components during and after exposure to static loads, and the instructions and information to be enclosed with the equipment. The requirements together constitute a Voluntary Product Standard, PS 66-75, which is intended to represent a consensus among producers, consumers and other interested parties but which is not necessarily legally enforceable. (Author/SB)

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Voluntary Product Standard

PS 66-75

ED145964

U.S. DEPARTMENT OF COMMERCE / National Bureau of Standards

SAFETY REQUIREMENTS FOR HOME PLAYGROUND EQUIPMENT

American National Standards Institute

American National Standard Z 3[illegible].1-1975

PS 009650

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ED145964

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Voluntary Product Standard PS 66–75

Safety Requirements for Home Playground Equipment

Approved by the American National Standards Institute on
May 20, 1976, as American National Standard Z 304.1–1975

Abstract

This Voluntary Product Standard provides safety requirements for various types of home playground equipment intended for use by children aged from 2 through 10 years. The requirements are concerned with the design and performance of the units and their components, the structural integrity of the units and their components during and after exposure to static loads, and the instructions and information to be enclosed with the equipment. Methods of identifying products which comply with this standard are given.

Key words: Home playground equipment, safety of; jungle gyms, safety of; playground equipment, safety of; safety of home playground equipment; slides, safety of; swing sets, safety of.

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For copies of the *Voluntary Product Standards* procedures or for more information concerning the development and use of these standards, you may write to: Standards Development Services Section; National Bureau of Standards; Washington, D.C. 20234.

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Safety Requirements for Home Playground Equipment

Effective October 1, 1976 (See section 5.)

(This Standard, which was initiated by the National Association of Children's Home Playground Manufacturers, Inc., has been developed under the *Procedures for the Development of Voluntary Product Standards* of the U.S. Department of Commerce.)

1. PURPOSE

The purpose of this Voluntary Product Standard is to establish nationally recognized safety requirements for home playground equipment and to provide a basis for common understanding among producers, distributors, and users of these products.

2. SCOPE

This Voluntary Product Standard provides safety requirements for various types of home playground equipment intended for use by children aged from 2 through 10 years. The types illustrated in figure 1 are examples, and the illustrations are not intended to limit the variety or various combinations of equipment that are covered by this Standard. Methods of identifying products which comply with this Standard are given. This Standard is not intended to apply to equipment to be used in places of public assembly such as schools, nurseries, day care centers, and parks.

Note: As an aid in correlating U.S. Customary Units to metric units, conversion factors for the units used in this Standard are given below:

1 inch	= 25.4 millimeters
1 foot	= 304.8 millimeters
1 pound (mass)	= 0.4536 kilogram
1 pound (force)	= 4.448 newtons

3. DEFINITIONS

For the purposes of this Standard, the following definitions shall apply:

3.1. Anchors—Anchors are accessories used to minimize possible tipping of the playground equipment, or lifting of the support legs during normal use or reasonably foreseeable abuse.

3.2. Edge, sharp[1]—A sharp edge is defined as an edge that can cut a child's skin during normal use or reasonably foreseeable abuse of the playground equipment. Such an edge is subjectively judged as sharp if it appears sharp to the casual observer.

3.3. Handrail—A handrail is the structural member which helps a child steady himself. As used in this Standard, a handrail is the structural member at the top of a slide (examples can be seen in (a) and (b) of fig. 1) which helps a child steady himself while he sits down.

3.4. Normal use—Normal use of playground equipment is defined as those safe play modes which conform to the instructions that accompany the equipment, or have been established by tradition or custom.

3.5. Point, sharp[2]—A sharp point is one that can puncture or lacerate a child's skin during normal use or reasonably foreseeable abuse of the

[1] This subjective definition may be superseded by a test method which has been proposed covering sharp edges and which may be promulgated by the Consumer Product Safety Commission (CPSC) as a mandatory test method. This test method proposed by CPSC was published in the Federal Register on January 7, 1975, under Section 1500.47 of Title 16 of the Code of Federal Regulations. Information on the availability of this device used in this test method can be obtained from the Office of the Secretary, CPSC, 1750 K Street, NW., Washington, D.C. 20207. Also, Underwriters Laboratories, Electrical Standards Department, Inc., has developed a sharp edge tester; information on this test device can be obtained from Underwriters Laboratories, Electrical Standards Department, 1285 Walt Whitman Road, Melville, NY 11746. Unless CPSC makes a test method mandatory, neither the test method proposed by CPSC nor the device developed by Underwriters Laboratories is currently required by this Standard.

[2] This subjective definition may be superseded by a test method which has been proposed covering sharp points and which may be promulgated by the CPSC as a mandatory test method. This test method proposed by CPSC was published in the Federal Register on January 7, 1975, under section 1500.48 of Title 16 of the Code of Federal Regulations. Information on the availability of this device used in this test method can be obtained from the Office of the Secretary, CPSC, 1750 K Street, NW., Washington, D.C. 20207. Unless CPSC makes a test method mandatory, this test method is currently not required by this Standard.

playground equipment. Such a point is subjectively judged as sharp if it appears sharp to the casual observer.

3.6. Reasonably foreseeable abuse—Reasonably foreseeable abuse is defined as those unsafe play modes which are reasonably foreseeable. Examples include a child in the way of a moving swinging element, and overloading the equipment or components with more children, or heavier children, than the equipment was designed for.

3.7. Resilient block—A resilient block is any device which conforms to the structural component being loaded in order to prevent a concentrated load over a small area of the structural component.

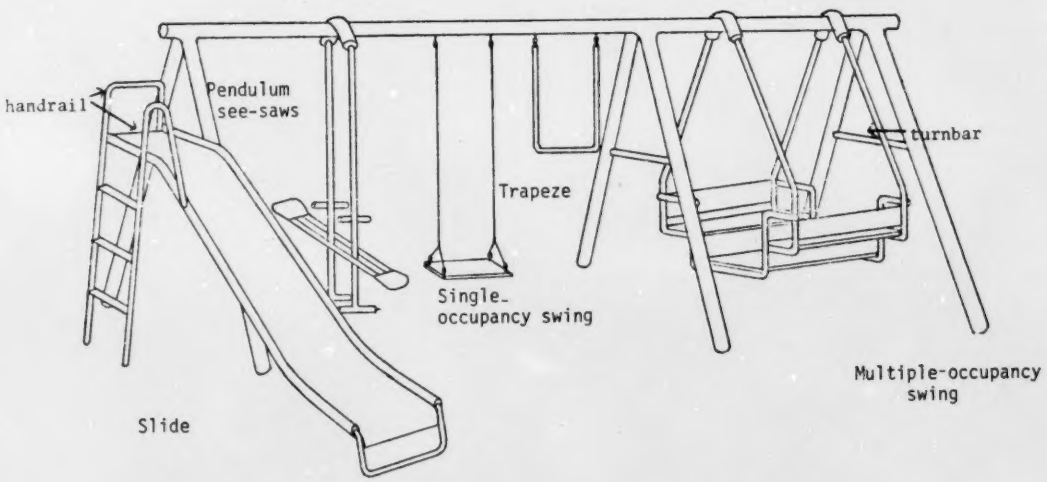
3.8. Turnbar—A turnbar is the horizontal bar between the supporting legs of a swing set such as the ones shown in (a) and (b) in figure 1.

4. REQUIREMENTS

4.1. General (applicable to all home playground equipment)—Playground equipment represented as complying with this Voluntary Product Standard shall meet all applicable requirements specified herein. Anyone representing compliance with this Standard shall keep such essential records as are necessary to document his claim that the requirements within the Standard have been met. Additional sampling and testing of the product, as may be agreed upon between producer and distributor or other groups, is not precluded by this section. Information on the rationale and reasons for the dimensions and static loads specified in this Standard can be obtained from the Standards Development Services Section, Standards Application and Analysis Division, National Bureau of Standards, Washington, D.C. 20234.

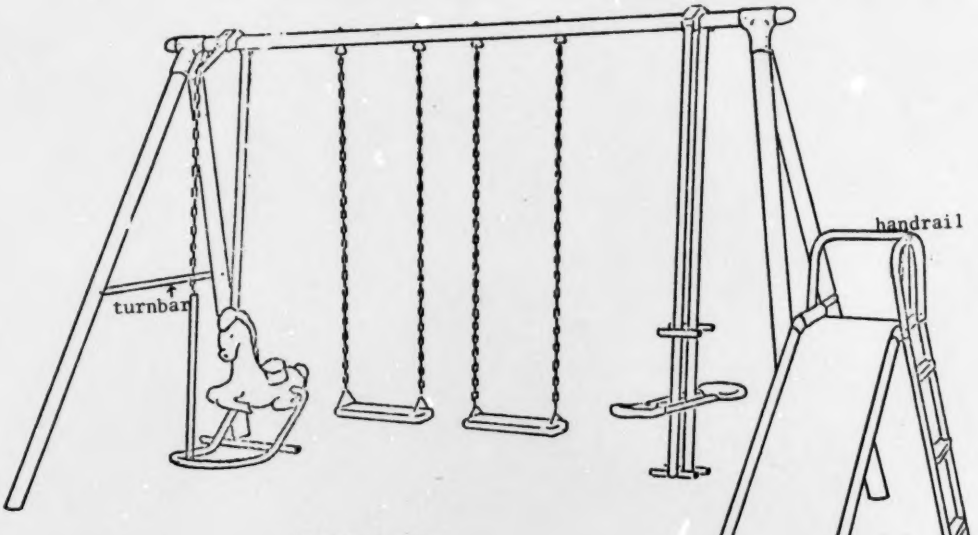
4.1.1. Conditioning—Prior to testing, all structural and protective plastic parts shall be subjected to 1,000 hours of xenon arc and moisture exposure in accordance with Procedure A of American Society for Testing and Materials (ASTM) D 2565-70, *Standard Recommended Practice for Operating Xenon Arc-Type (Water-Cooled) Light-and-Water-Exposure Apparatus for Exposure of Plastics.*[3] There shall be 102 minutes of xenon arc exposure followed by 18 minutes of simultaneous xenon arc and moisture exposure; this cycle shall continue over and over for 1,000 hours. Any structural plastic parts after being subjected to this test, shall retain a minimum of 70 percent of their original tensile

[3] Later issues of all ASTM publications referenced in this Standard may be used, providing the requirements are applicable and consistent with the issues designated. Copies of ASTM publications are available from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pa. 19103.

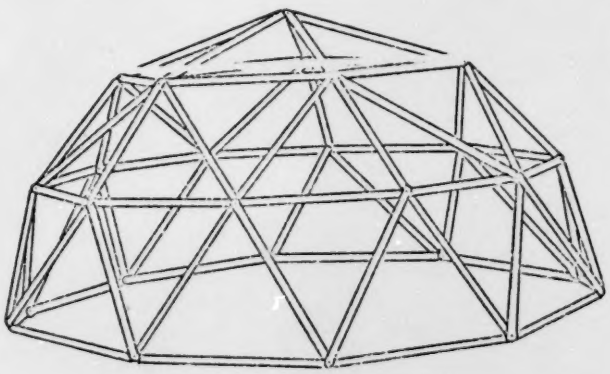


(a) Swing set

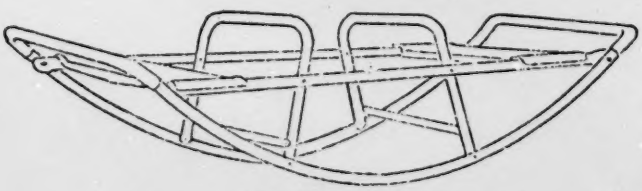
FIGURE 1. *Examples of home playground equipment.*



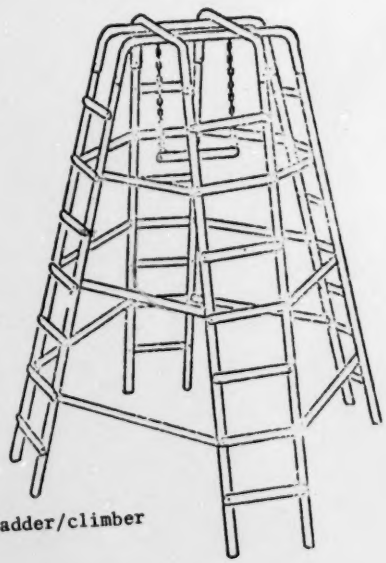
(b) Swing set



(c) Dome climber

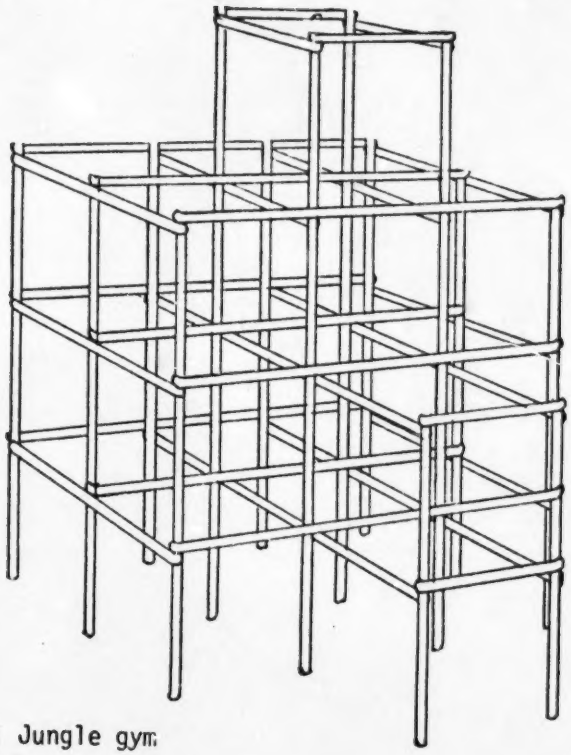


(d) Kiddie rocker

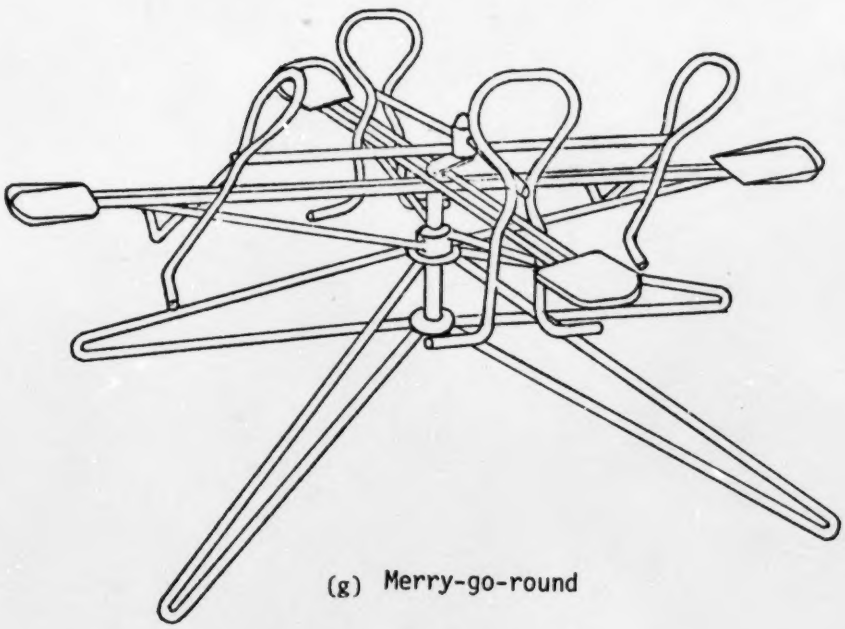


(e) Ladder/climber

FIGURE 1.—Continued. ***Examples of home playground equipment.***

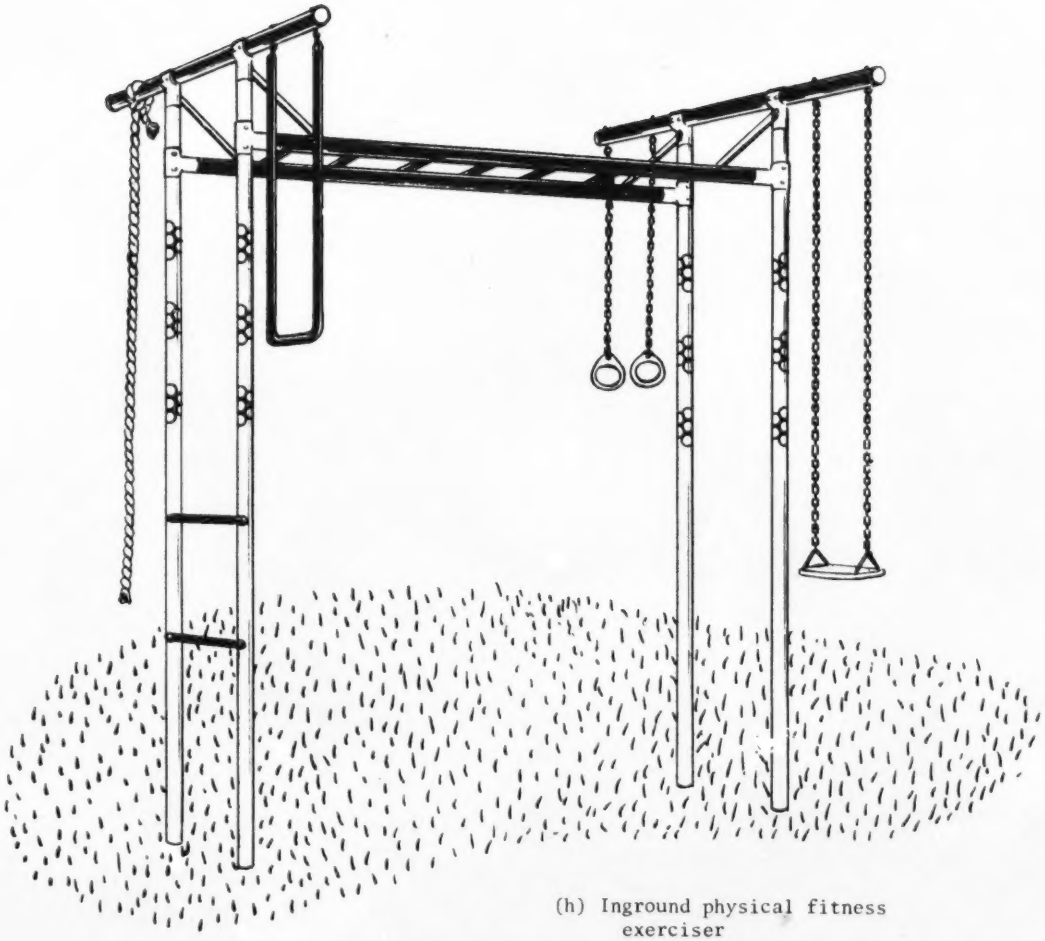


(f) Jungle gym



(g) Merry-go-round

FIGURE 1.—Continued. *Examples of home playground equipment.*



(h) Inground physical fitness exerciser

FIGURE 1.—Continued. *Examples of home playground equipment.*

strength, and in addition, shall exhibit elongation greater than 10 percent when tested at an extension rate of 2 inches per minute when tested in accordance with ASTM D 638–68, *Standard Method of Test for Tensile Properties of Plastics* (type IV tensile specimens of the plastic material shall be used for the tests). Also, prior to testing, all metal parts shall be partially assembled (in order to expose dissimilar metals) and subjected to 100 hours of salt spray exposure in accordance with ASTM B 117–74, *Standard Method of Salt Spray (Fog) Testing.*[4]

[4] See footnote 3, page 2.

4.1.2. Paint toxicity—All paints and finishes used on playground equipment shall be in accordance with Title 16, Code of Federal Regulations, Section 1500.17(a)(6)(i).

4.1.3. Edges, points, and surfaces—Following assembly of the unit in accordance with the instructions to be provided to the consumer, there shall be no sharp edges, points, or surfaces on any portion of the home playground equipment capable of inflicting a cut on a child during normal use or reasonably foreseeable abuse. All open tubing ends which are not resting on the ground, or otherwise covered, shall be provided with caps or plugs which have a smooth finish, are tight fitting, and cannot be removed by a 15-pound force when tested in accordance with

Title 16, Code of Federal Regulations, Section 1500.53(f).

4.1.4. Pinch, crush, and shear points—There shall be no pinch, crush, or shear points caused by junctures of two components moving relative to one another which could cause a contusion, laceration, abrasion, amputation, or fracture during normal use or reasonably foreseeable abuse and at any time while the swinging elements are within their normal swinging angles (see 4.7). A pinch, crush, or shear point shall be defined as any point which entraps at one or more positions a ⅜-inch diameter neoprene rod. Entrapment shall mean that a force of more than 2 pounds is required to pull out the rod. In addition, an opening present at the juncture of the stationary support and a rigid supporting member for a swinging element (i.e., pendulum seesaw, multiple-occupancy swing, etc.) shall accept during normal use and reasonably foreseeable abuse without entrapment, a ½-inch diameter neoprene rod. The neoprene rods shall have a hardness reading somewhere between 50 and 60 as determined by a type A durometer in ASTM D 2240–68, *Standard Method of Test for Indentation Hardness of Rubber and Plastics by Means of a Durometer.*[5]

4.1.5. Acute angles—Any acute angle, or group of acute angles, formed by two or more members in which the legs point upward from the apex so that the configuration approximates a "V" with an interior angle less than 55° shall be covered with a shield which is made of a rigid material. The shield shall be capable of withstanding an impact of at least 20 foot-pounds imparted to a spot within 1 inch of the geometric center of the shield by a 5-inch diameter steel ball. The shield shall be tested while secured to the members of the playground equipment by the hardware provided. During the test, the equipment or portions thereof, if required, shall be oriented so that the surface of the shield is horizontal. Those "V's" which are inverted or whose apex is 18 inches or less above ground level are not required to be covered. A "V" is considered inverted if the lower adjacent leg forming the "V" is horizontal or slopes downward from the apex.

4.1.6. Spacing—Swing sets containing multiple swinging elements shall be designed so that there is a minimum of 8 inches separating elements which are capable of lateral motion (chain or rope suspension) and a minimum of 7 inches separating members with restricted lateral motion (tube or rod suspension). The outermost lateral extremities of the swinging elements shall govern the measurement of separation; an example is illustrated by dimension A in figure 2. There shall be a minimum of 15 inches separating ropes, poles, and other similar single swing elements capable of lateral motion from other swing elements; an example is illustrated by dimension B in figure 2. The minimum separations above shall also apply between swinging elements and stationary frame members of the playground equipment; however, in the case of the supporting legs of the frame at the ends of the swing set, the minimum separation shall be measured from the lateral extremity of swings, pendulum seesaws, and multiple-occupancy swings at a point at least 28 inches from the top of the seat,[6] when the bottom of the seat is at least 15 inches from the ground, to the supporting leg or turnbar at any point of the arc caused by normal swinging; an example is illustrated by dimension C in figure 2.

[5] See footnote 3, page 2.

[6] The 28 inches is the approximate sitting height of a 10-year-old boy.

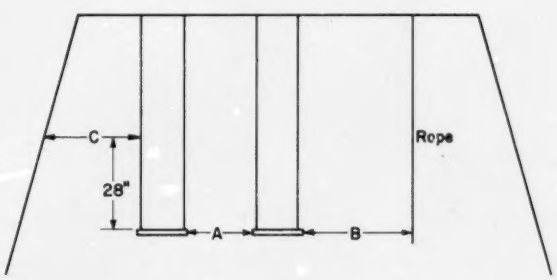


FIGURE 2. *Minimum separations.*

4.1.7. Hardware—By design, bolt ends shall not protrude beyond the nuts more than the diameter of the bolt when the nuts are tightened at screwdriver torque (screwdriver torque is between 20 and 25 inch-pounds). Smooth finish caps shall be provided for the purpose of covering exposed bolt ends. These smooth finish caps shall be tight fitting and shall resist a 15-pound force when tested in accordance with Title 16, Code of Federal Regulations, Section 1500.53(f) when the caps are engaged to a length of $\frac{3}{16}$ inch (tolerance: plus $\frac{3}{64}$ inch, minus zero inch [see 4.10.2(e)]). Lock washers, self-locking nuts, or other locking means shall be provided for all bolts. Open-ended hooks, including open-ended "S" hooks, shall not be used. Chains used in swing sets shall be 1/0 size double loop chains,[7] or equivalent.

4.1.8. Enclosed openings—Home playground equipment shall be designed and constructed or assembled so that any opening, the lowest point of which is greater than 24 inches above ground level, that will accept a 4-inch by 5-inch gage shall also accept a 9½-inch by 9½-inch gage. "O" rings or other similar devices provided with or sold for use with playground equipment and gym sets shall also meet these requirements. Openings between the equipment members and the ground surface are exempt from this requirement. Specific requirements for openings in multiple-occupancy swings are provided in 4.2, in slide ladders in 4.5.1, and in pendulum seesaws in 4.6.

4.2. Swings—Swings designed for individual use shall be equipped with seats that weigh not more than 1½ pounds. If made of a rigid material (i.e., a seat which retains its shape during normal use or reasonably foreseeable abuse), the seat shall have fore and aft edges with heights of at least $\frac{5}{8}$ inch. All corners of wooden or metal seats shall be rounded to at least a 1-inch radius and all corners of plastic seats shall be rounded to at least a ¼-inch radius. All exposed horizontal edges of seats made of a rigid material shall be rounded to at least a ⅛-inch radius.[8] If a hole or slot in any rigid material can admit a ¼-inch-diameter rod to a depth of $\frac{3}{8}$ inch or greater, it shall also admit a ½-inch diameter rod. Multiple-occupancy swings shall be provided with platforms or footrests meeting the following criteria:

a. The distance between the forward leading edge of the seat measured horizontally to the outside edge of the platform or footrest shall not be greater than 3 inches (this distance is shown by dimension A in fig. 3). The space between any slats in the platform shall be no greater than 1½ inches.

b. The bottom edge of the seat skirt shall be not more than 10 inches or less than 4 inches above the top surface of the platform or footrest, regardless of the position of the multiple-occupancy swing (this distance is shown by dimension B in fig. 3).

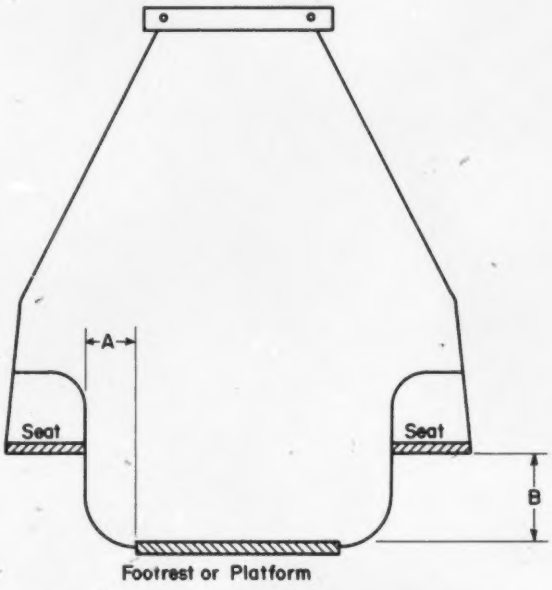


FIGURE 3. *Side view of multiple-occupancy swing.*

4.3. Hanger and bearing assemblies—All moving suspended elements except ropes shall have hanger assemblies which contain bearings, and whose durability shall be determined by the following dynamic cycling test. The hanger assembly or assemblies shall be installed in a suitable test fixture and fitted with its support bar(s) or chains and its seat(s). A dead weight of at least 90 pounds shall be secured to each seat position. The suspended unit shall then be oscillated

[7] Information on the specifications of 1/0 double loop chains may be found in *Weldless Chain Specifications*, adopted in August 1961, and published by and available free of charge from the National Association of Chain Manufacturers, 111 West Washington Street, Chicago, Illinois 60602.

[8] It is recognized that seat weight and width criteria alone may not be adequate in order to effectively eliminate seats which are unreasonably hazardous. Either an impact test with the peak impulsive force per unit width allowable or the maximum rigidity allowable should be specified. Since no readily agreed upon peak impulsive force or rigidity requirements have been developed, no requirements of these kinds were incorporated into this Standard. Once appropriate criteria are developed, they can be incorporated into a revision of this Standard.

through an arc with an included angle as specified in paragraph 4.7 for a total of 180,000 times. At the completion of the test there shall be no loosening or structural failure of the hanger assembly or bearing.

4.4. Minimum ground clearance—When the assembled swing set is on a level hard surface, the minimum clearance between the ground surface and the underside of any suspended unit shall be 8 inches.

4.5. Slides—Slides shall be constructed in a manner that eliminates exposed blunt vertical members or angular uprights. The inclined sliding surface and the exit surface shall be one seamless surface. The slide shall have raised edges that project at least 1 inch above the sliding surface when measured perpendicularly to that surface. The slide shall have a reduced-gradient exit surface at least 6 inches in length; the reduced-gradient exit surface shall be at a minimum angle of 18° from the inclined sliding surface and the exit surface shall be at an angle of 10° or greater, but not more than 30°, from the horizontal. The end of the slide shall be no more than 12 inches off the ground as measured from the sliding surface.

4.5.1. Slide ladders—The rungs of slide ladders shall be at least 10 inches wide and 1 inch in horizontal depth and shall be spaced between 8 and 11 inches apart when measured vertically. Such rungs shall have a horizontal surface when the slide is in its normal position on a level surface, and the rungs shall have top horizontal surfaces which provide resistance to slipping. Slide ladders shall be provided with handrails to provide security in the transition from the slide ladder to the sliding surface. The end of the exit surface shall be formed through an arc of at least 170°.

4.5.2. Stability of free-standing slides—Free-standing slides, when anchored in accordance with the instructions enclosed with the slide, shall be capable of supporting a sandbag weighing at least 90 pounds completely hanging over the handrail at its highest point without any part of the slide being lifted from a level supporting surface.

4.6. Pendulum see-saws—Pendulum see-saws shall be provided with footrests. There shall be no openings with internal dimensions of which both the length and width are greater than 5 inches and less than 10 inches. The spacing between the two support bars shall not decrease toward the seat supports. In the case of a pendulum see-saw designed with formed handles providing a greater opening, the minimum spacing below the formed handles shall be at least 7 inches.

4.7. Swing set stability—With the swing set assembled in accordance with the instructions (see 4.10.2), except that the set is unanchored[9] and the swing set support legs are chocked to prevent sliding, the swing set of the general types shown in (a) or (b) of figure 1 shall remain upright when a weight of at least 75 pounds is placed in each position that can be occupied by a child and the swinging elements are swung freely in unison through the following specified included angles: Swings, ropes, poles and trapezes—90±5°; pendulum see-saws (air gliders, glide riders, sky shooters, etc.)—60±5°; and multiple-occupancy swings—45±5°.

4.8. Vertical members—Ends of vertical members shall not protrude above attached horizontal members.

4.9. Structural integrity—There shall be no loosening or instability of the equipment or structural failure[10] of any component or assembly during or following the application of the load in a manner which would be hazardous to the safety of the children using the equipment after the tests specified in 4.9.1 through 4.9.7 are performed on units assembled in accordance with the installation instructions enclosed with the equipment.

4.9.1. Rungs, steps, and horizontal supporting members—Rungs, steps, and other horizontal supporting members 24 inches or less in length except turnbars and footrests shall be capable of sustaining a vertical load (applied without shock) of at least 300 pounds applied for a minimum of 5 minutes to a 3½-inch resilient block resting on the center of the member. Turnbars shall be capable of sustaining a vertical load (applied without shock) of at least 300 pounds applied for a minimum of 5 minutes to two 3½-inch resilient blocks (at least 150 pounds per block), one resting at the ⅓ and the other at the ⅔ points between the ends of the turnbar. Footrests shall be capable of sustaining a vertical load (applied without shock) of at least 150 pounds applied for a minimum of 5 minutes to a 3½-inch resilient block at the center of one (or the other) footrest. Horizontal members greater than 24 inches in length except turn bars shall be capable of sustaining for a minimum of 5 minutes a vertical load of at least 400 pounds applied without shock to two 3½-inch resilient blocks (at least 200 pounds per block), one resting at the ⅓ and the other at the ⅔ points be-

[9] The unanchored stability test does not apply when an in-ground product designed by the manufacturer requires the product to be installed in cement, such as the example shown in (h) of figure 1.

[10] Structural failure is when the equipment or any component thereof no longer meets the requirements of this standard.

tween the ends of the horizontal member. The load (or loads) shall be applied to one member at a time, unless otherwise specified for the particular equipment.

4.9.2. Top support bar—The top support bar of any swing set shall be loaded with a total load applied vertically, without shock, and the total load shall remain for a minimum of 5 minutes. This total load shall be the sum of the following loads which are applicable:

(a) For swings, ropes, poles, and trapezes, a load of at least 150 pounds per position normally occupied by a child at play.
(b) For pendulum see-saws, a load of at least 120 pounds per position normally occupied by a child at play.
(c) For multiple-occupancy swings, a load of at least 110 pounds per position normally occupied by a child at play.

4.9.3. Individual suspended units—Individual suspended units shall be tested one at a time as indicated in table 1 without evidence of structural failure to the unit or its supporting system. The loads shall be applied without shock and each unit shall be loaded for a minimum of 5 minutes.

TABLE 1. *Minimum test loads for individual suspended units*

Unit	Test conditions	Simultaneous minimum weight load per child position (pounds)	Total minimum weight (pounds)
Swing	In swing set[b]	600	600
Pendulum see-saw	In swing set	150	300
2 pass. multiple-occupancy swing (seats)[a]	In swing set	150	300
2 pass. multiple-occupancy swing (platforms)[a]	In swing set	150	300
4 pass. multiple-occupancy swing (seats)[a]	In swing set[b]	150	600
4 pass. multiple-occupancy swing (platforms)[a]	In swing set[b]	150	600
Trapeze	In swing set	300	300
Poles, ropes, chains, "O" rings	In swing set	300	300

[a] The seats shall be tested separately from the platforms.
[b] Auxiliary support of the top bar during the test shall be permissible.

4.9.4. Slides—A load of at least 300 pounds each shall be applied simultaneously to the entry and exit surfaces of the slide. The loads shall be applied without shock and shall remain in position for a minimum of 5 minutes.

4.9.5. Rockers—A load of at least 150 pounds shall be applied vertically, without shock, to each position which would normally be occupied by a child at play, and all the loads shall remain in position simultaneously for a minimum of 5 minutes.

4.9.6. Merry-go-rounds—A load of at least 150 pounds shall be applied vertically, without shock, to each position which would normally be occupied by a child at play, and all the loads shall remain in position simultaneously for a minimum of 5 minutes.

4.9.7. Climbing towers/jungle gyms—A total load of at least 750 pounds shall be applied in five equal segments, each of at least 150 pounds, on five different elements of the equipment. These five loads shall be applied in the worst possible configuration (i.e., in the positions which will most likely cause failure and/or instability of the climbing tower or jungle gym). The loads shall be applied by loading horizontal members using 3½-inch resilient blocks in the center of the member, with the loads remaining simultaneously for a minimum of 5 minutes.

4.10. Instructions and information—The following instructions and information shall be provided with the apparatus.

4.10.1. Information on manufacturer or distributor—The instructions shall carry in a prominent place the name and address of the manufacturer or distributor, and the model number of the playground equipment. Also, there shall be an instruction advising the buyer to save this instruction and information sheet in the event that the manufacturer has to be contacted.

4.10.2. Installation instructions and information—The installation instructions and information shall include the following:

(a) The equipment should be placed on level ground, not less than 6 feet from any structure or obstruction such as a fence, garage, house, overhanging branches, laundry lines, or electrical wires.

(b) The buyer should avoid installation of home playground equipment over concrete or gravel.

(c) Detailed instructions on how the anchors are to be installed to prevent tipping, overturning, or lifting of the support members during anticipated usage shall be provided; instructions regarding anchoring in the range of soil conditions normally encountered shall be included. Instructions shall also state that the anchoring devices must be placed at or below ground level

in such a way as to prevent a tripping hazard.

(d) When the equipment is shipped other than completely assembled, assembly instructions shall be provided including schematic drawings or renderings which, when followed, will enable an unskilled layman to correctly assemble the equipment and to avoid errors which could result in unsafe assembly.

(e) Full-size diagrams of bolts, nuts, and washers and a list and description of all tools required shall be incorporated into the instructions. Lock nuts shall be clearly identified. Cautionary statements shall be included which recommend tightening bolts securely. There shall be instructions advising the buyer to tighten the nuts on bolts flush to the tube (or member) and that caps to go over the exposed bolts shall be put on snug to the nut.

(f) Cautionary statements shall be included which warn that children should not use the equipment until properly installed.

4.10.3. Operating instructions—The operating instructions shall include statements:

(a) specifying the number and weight of occupants that may safely use the equipment singly or simultaneously.

(b) advising on-site adult supervision for children under 4 years of age.

(c) advising the buyer to caution children about walking too closely in front of, or behind, or between moving items.

(d) advising the buyer to caution children not to twist swing chains as this may cause a reduction in the strength of the chain.

(e) advising the buyer to caution children to avoid swinging empty seats.

(f) advising the buyer to teach children to sit in the center of the swings with their full weight on the seats.

(g) advising the buyer to caution children not to use the equipment in a manner other than intended.

(h) advising the buyer to caution children not to get off equipment while it is in motion.

(i) warning the parent to dress children appropriately; examples would include the use of well-fitting shoes, and the avoidance of ponchos, scarfs, and other loose-fitting clothing which is potentially hazardous while using equipment.

4.10.4. Maintenance instructions—The maintenance instructions shall include the following:

(a) All nuts and bolts should be checked twice monthly during the usage season for tightness and tightened as required. It is particularly important that this procedure be followed at the beginning of each season.

(b) Plastic swing seats should be removed and taken indoors when the temperature drops below 30 °F.

(c) All metallic moving parts should be oiled monthly during the usage period.

(d) All coverings for bolts and sharp edges should be checked twice monthly during usage season to be certain they are in place. It is especially important to do this at the beginning of each new season.

(e) Swing seats and chains should be checked monthly during usage season for evidence of deterioration. Replacement should be made in accordance with manufacturer's instructions.

(f) Rusted areas on tubular members should be sanded and repainted using a nonlead-based paint meeting the requirements of Title 16, Code of Federal Regulations, Section 1500.17(a)(6)(i).

4.10.5. Disposal instructions—There shall be instructions advising the buyer to disassemble and dispose the playground equipment in such a way that no unreasonable hazards will exist at the time the swing set is disposed of.

4.11. Packaging—All equipment shall be packaged in a manner that will preclude any sharp edges from being exposed during transit or storage.

5. EFFECTIVE DATE AND IDENTIFICATION

The effective date of this Standard is October 1, 1976. As of the effective date, reference to PS 66–75 may be made in contracts, codes, advertising, invoices, product labels, and the like, but no product may be advertised or represented in any manner which would imply or tend to imply approval or endorsement of that product by the National Bureau of Standards, the Department of Commerce, or by the Federal Government.

The following statements are suggested for use in representing products as conforming to all requirements of this Standard:

(1) "This _____ conforms to all requirements established in Voluntary Product Standard PS 66–75, "Safety Requirements for Home Playground Equipment," developed and published in accordance with the U.S. Department of Commerce *Procedures for the Development of Voluntary Product Standards.* Full responsibility for the conformance of this product to the standard is assumed by (name and address of producer or distributor)."

(2) "Conforms to PS 66–75, (name and address of producer or distributor)."

6. HISTORY OF PROJECT

In 1971, the National Association of Children's Home Playground Manufacturers, Inc., requested that the National Bureau of Standards initiate development of a standard for home playground equipment safety under the *Procedures for the Development of Voluntary Product Standards.* After three committee meetings during January and February of 1975 in Washington, D.C., the Standard Review Committee recommended that the standard be circulated for acceptance. The standard was circulated for acceptance in May 1975 and the responses indicated consensus among producers, distributors, and consumers in accordance with the published procedures. The standard designated PS 66–75, *Safety Requirements for Home Playground Equipment*, was approved for publication by the National Bureau of Standards to be effective October 1, 1976.

Technical Standards Coordinator:
John M. Tascher
Standards Development Services Section
National Bureau of Standards
Washington, D.C. 20234

7. STANDING COMMITTEE

A Standing Committee has been appointed to assist in keeping this Voluntary Product Standard up to date. The names of the members of the committee are available from the Standards Development Services Section, National Bureau of Standards, Washington, D.C. 20234, which serves as the secretariat for the committee.

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NOTE: At present the principal publication outlet for these data is the Journal of Physical and Chemical Reference Data (JPCRD) published quarterly for NBS by the American Chemical Society (ACS) and the American Institute of Physics (AIP). Subscriptions, reprints, and supplements available from ACS, 1155 Sixteenth St. N. W., Wash. D. C. 20056.

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Voluntary Product Standards—Developed under procedures published by the Department of Commerce in Part 10, Title 15, of the Code of Federal Regulations. The purpose of the standards is to establish nationally recognized requirements for products, and to provide all concerned interests with a basis for common understanding of the characteristics of the products. NBS administers this program as a supplement to the activities of the private sector standardizing organizations.

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